Superior Clamping and Gripping

Product Information

Universal gripper EZN 64

Robust. Flexible. Strong.

Universal gripper EZN

Servo-electric 3-finger centric gripper with high gripping force and high maximum moment due to multi-tooth guidance

Field of application

Optimal standard solution for many areas of application; flexible use due to controllable gripping force, position, and speed

Advantages – Your benefits

Drive design of servomotor for flexible use

With external electronics for simple integration into existing servo-controlled concepts via PROFINET, PROFIBUS or CAN

Pre-positioning capability to reduce cycle times through a short working stroke

Robust multi-tooth guidance for precise handling

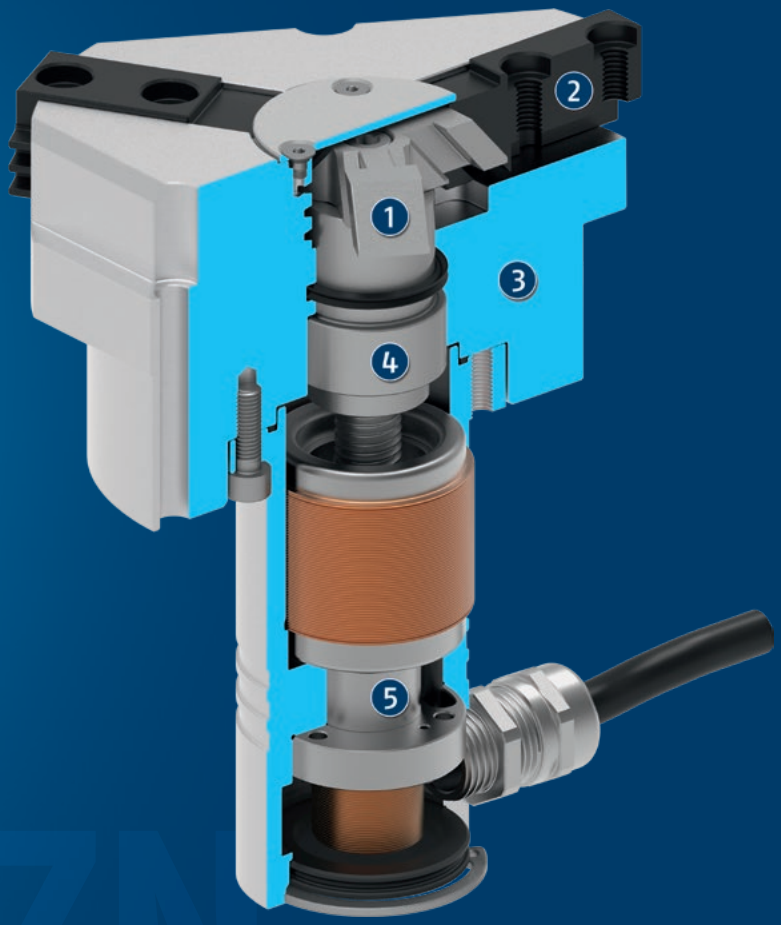
High maximum moments possible suitable for using long gripper fingers

Fastening at one gripper side in two screw directions for universal and flexible gripper assembly

Sizes	Weight	Gripping force	Stroke per jaw	Workpiece weight
Quantity: 2	0.98 .. 2.48 kg	500 .. 800 N	6 .. 10 mm	2.5 .. 4 kg

Functional description

The spindle nut which is mounted on bearings, transfers the rotary motion of the servomotor into an axial motion. The oblique surfaces of the wedge-hook generate a synchronous jaw movement.



① **Wedge-hook design**
for high force transmission and centric gripping

② **Base Jaw**
with multi-tooth guidance for precise gripping, even with long gripper fingers

③ **Housing**
is weight-optimized due to the use of high-strength aluminum alloy

④ **Spindle nut**
transforms the rotational movement into the axial movement of the wedge-hook

⑤ **Drive**
DC servomotor with resolver

General notes about the series

Operating principle: Wedge-hook kinematics

Housing material: Aluminum alloy, coated

Base jaw material: Steel

Actuation: servo-electric, via brushless DC servomotor and spindle drive

Warranty: 24 months

Scope of delivery: Enclosed accessory pack with centering sleeves and centering pin, assembly and operating manual with declaration of incorporation. An external ECM controller is required for operating the gripper EZN Connection cables are also required for the plug version EZN-S. The controller and the connection cables are not included in the scope of delivery and have to be ordered separately.

Gripping force: is the arithmetic sum of the individual force applied to each jaw at distance P (see illustration).

Finger length: is measured from the reference surface as the distance P in direction to the main axis.

Repeat accuracy: is defined as a distribution of the end Position for 100 consecutive strokes.

Workpiece weight: is calculated for force-fit gripping with a coefficient of static friction of 0.1 and a safety factor of 2 against workpiece slippage at acceleration due to gravity g. For form-fit or capture gripping, there are significantly higher permissible workpiece weights.

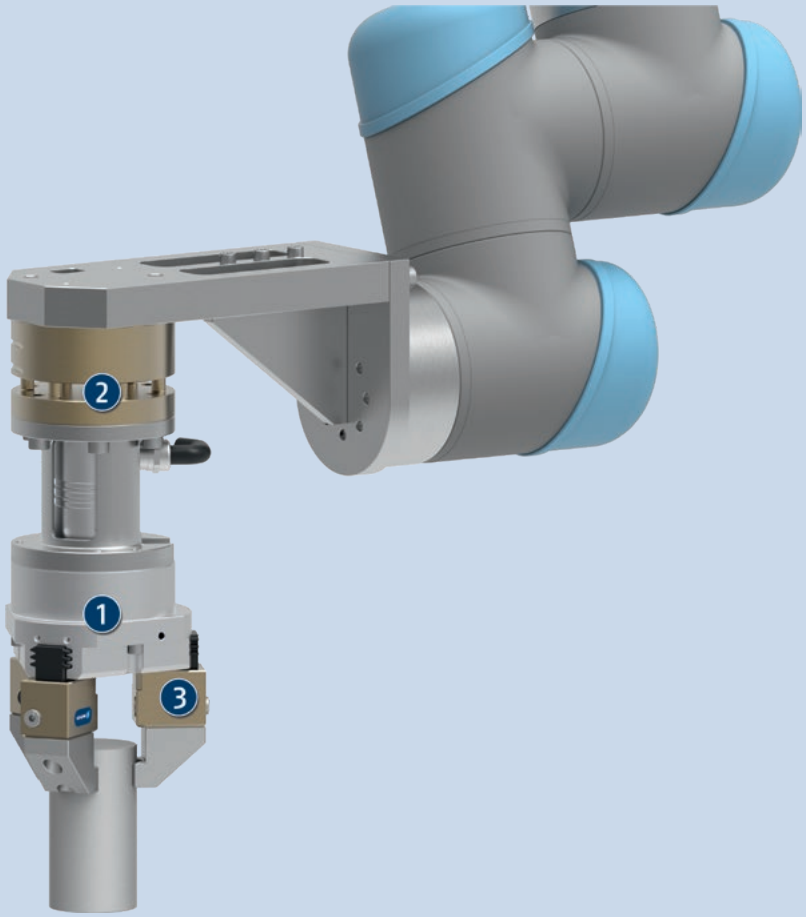
Closing and opening times: Minimum closing and opening times are merely the movement times of the base jaws or fingers at max. speed, max. acceleration, without current limitation (maximum current), and observance of the maximum permissible mass per finger.

Nominal currents: can be permanently actuated. With regard to all the currents which are ranging above the nominal current up to the maximum current, the notes of the individual product documentation has to be respected.

Application example

Gripping unit for machine loading of raw material

1. EZN 3-finger centric gripper
2. Compensation Unit AGE-Z
3. Jaw quick-change system BSWS



SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.

Controller

Jaw quick-change system

Finger blank

Protection cover

ⓘ For more information on these products can be found on the following product pages or at schunk.com.

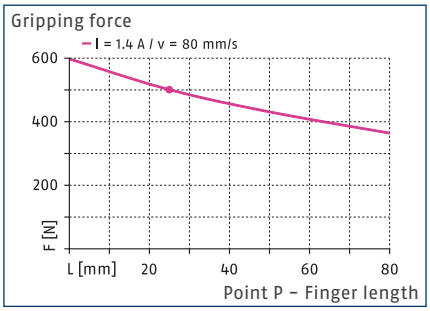
Options and special information

Control via external controller ECM: The electrical control of the gripper takes place via the separately available controller ECM. Integration of the controller into the higher-level control concept is either via PROFINET, PROFIBUS-DP or CAN. The communication interfaces ensure simple integration into the higher level control system and enable the design of industrial bus topologies.
Plug version EZN-S: Plug version EZN-S is available for the ECM controller in addition to the standard variant with 5 m attached connection cable. The gripper has a 30 cm cable and stepped Y-plug in this version. Cable track-compatible or robot-compatible power and sensor cables have to be ordered separately.
Dustproof version SD: absolutely dustproof, increased degree of protection against ingress of materials.

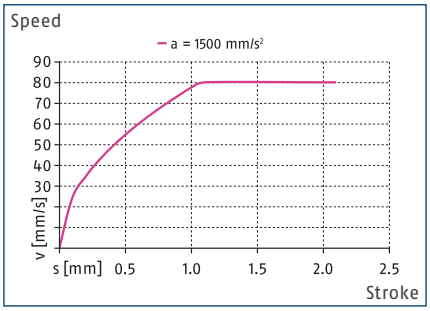
EZN 64

Universal gripper

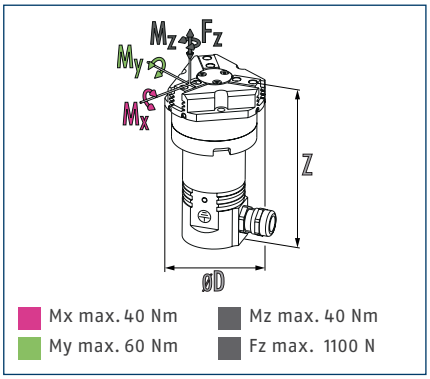
Gripping force



Speed



Dimensions and maximum loads



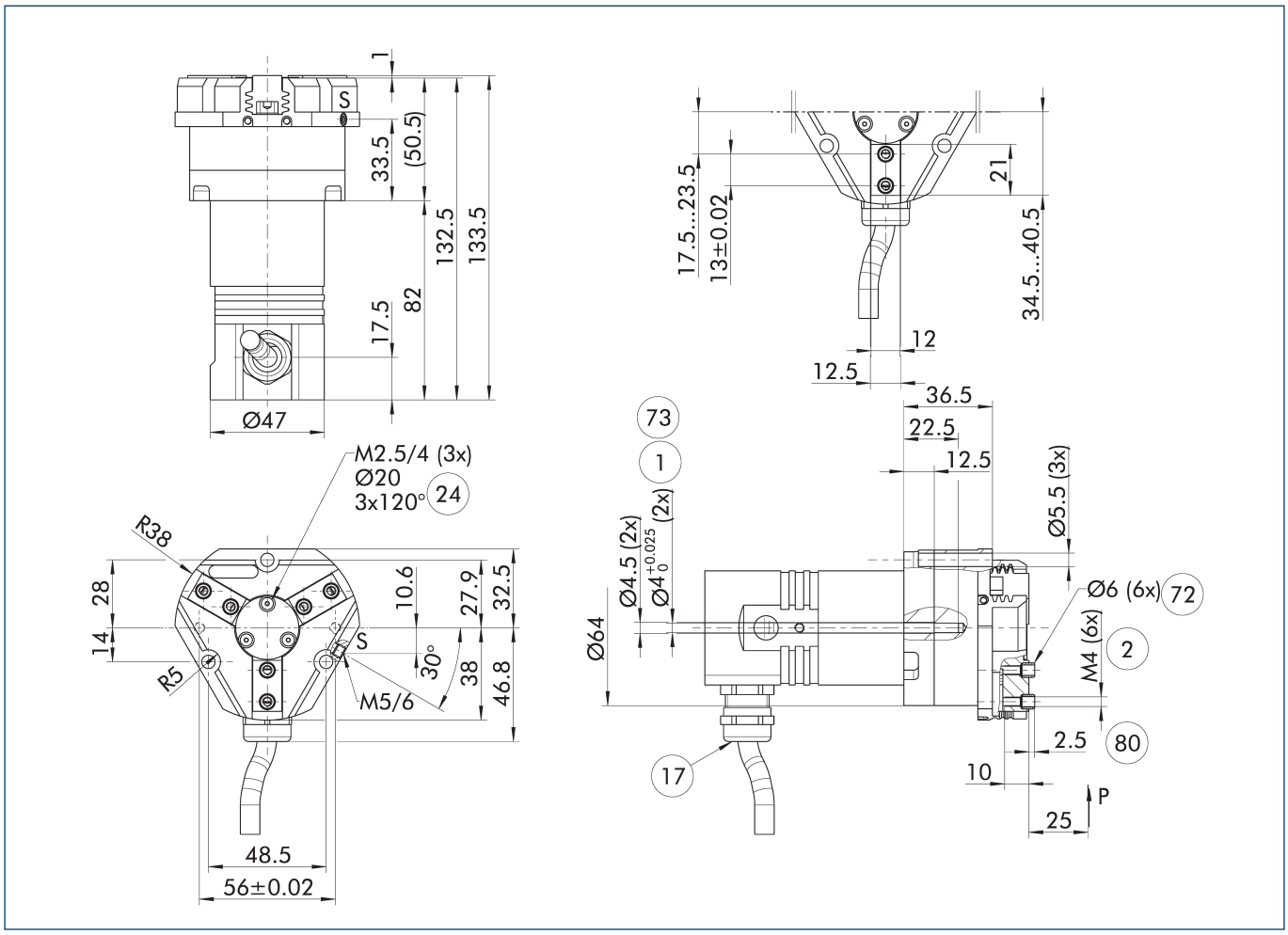
ⓘ The indicated moments and forces are statical values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Description		EZN 64	EZN 64-S
ID		0306110	0306113
General operating data			
Stroke per jaw	[mm]	6	6
Min./max. gripping force	[N]	140/500	140/500
Recommended workpiece weight	[kg]	2.5	2.5
Max. permissible finger length	[mm]	80	80
Max. permissible mass per finger	[kg]	0.35	0.35
Repeat accuracy	[mm]	±0.01	±0.01
Min./max. air purge pressure	[bar]	0.5/1	0.5/1
Closing/opening time	[s]	0.25/0.25	0.25/0.25
Max. speed	[mm/s]	80	80
Max. acceleration	[mm/s²]	1500	1500
Weight	[kg]	0.98	0.98
Min./max. ambient temperature	[°C]	5/55	5/55
IP protection class		41	41
Dimensions Ø D x Z	[mm]	70.5 x 133.5	70.5 x 133.5
Electrical operating data			
Nominal voltage	[V DC]	24	24
Nominal current	[A]	1.4	1.4
Max. current	[A]	4	4
Controller electronics		external	external
Controller type		ECM-EZN064	ECM-EZN064
Communication interface		See controller ECM	See controller ECM
Options and their characteristics			
Dustproof version		37306110	37306113
IP protection class		64	64
Weight	[kg]	1.08	1.08

ⓘ Plug version EZN-S is available for the ECM controller in addition to the standard variant with 5 m attached connection cable. The gripper has a 30 cm cable and stepped Y-plug in this version. Cable track-compatible or robot-compatible power and sensor cables have to be ordered separately.

Main view



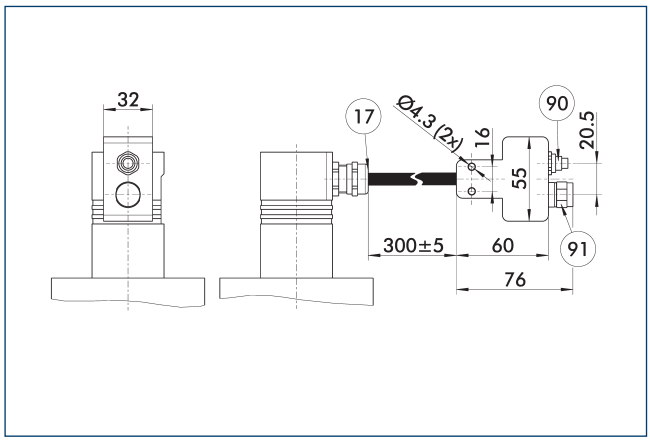
The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

S Air purge connection
(1) Gripper connection
(2) Finger connection
(17) Cable outlet
(24) Bolt circle
(72) Fit for centering sleeves
(73) Fit for centering pins
(80) Depth of the centering sleeve hole in the counter part

EZN 64

Universal gripper

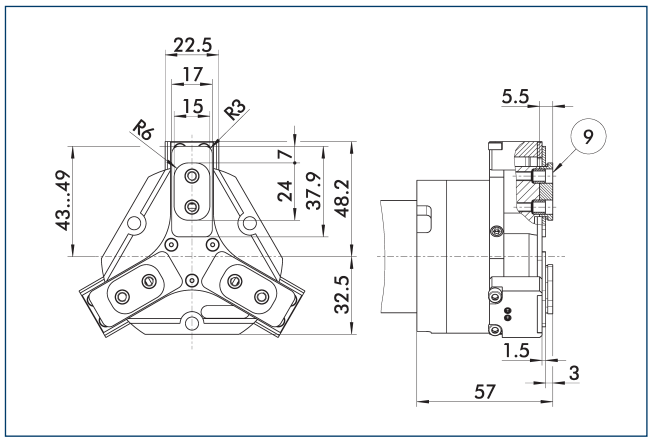
Plug version



(17) Cable outlet
(90) Sensor plug (M12) for sensor cable
(91) Motor plug (M17) for power cable

The drawing shows the plug version. It comprises a Y-plug and approximately 30 cm of cable between the module and plug.

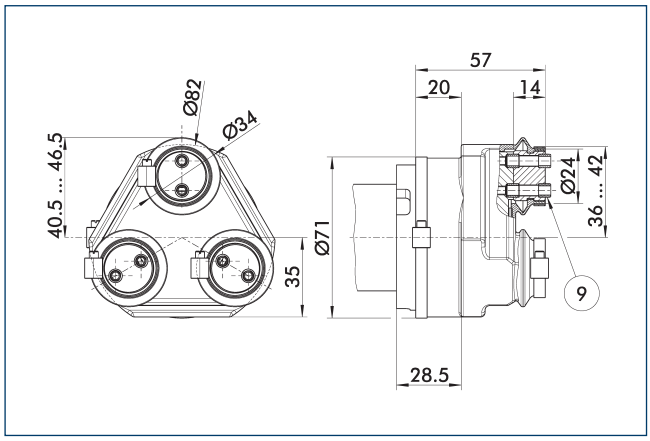
Dustproof version



(9) For mounting screw connection diagram, see basic version

The "dustproof" option increases the degree of protection against penetrating substances. The assembly diagram shifts by the height of the intermediate jaw. The finger length is still measured from the upper edge of the gripper housing.

Protective cover HUE EZN-S 64

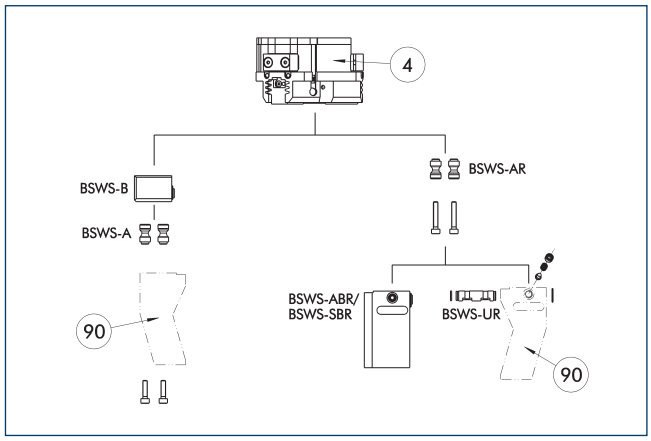


(9) For mounting screw connection diagram, see basic version

The HUE protective cover fully protects the gripper against external influences. The cover is suitable for applications of up to IP65 if an additional sealing of the cover bottom is provided. For detailed information, please see the HUE series. The connection diagram shifts by the height of the intermediate jaw.

Description	ID	IP protection class
Protection cover		
HUE EZN 64	0307043	65

BSWS jaw quick-change jaw systems



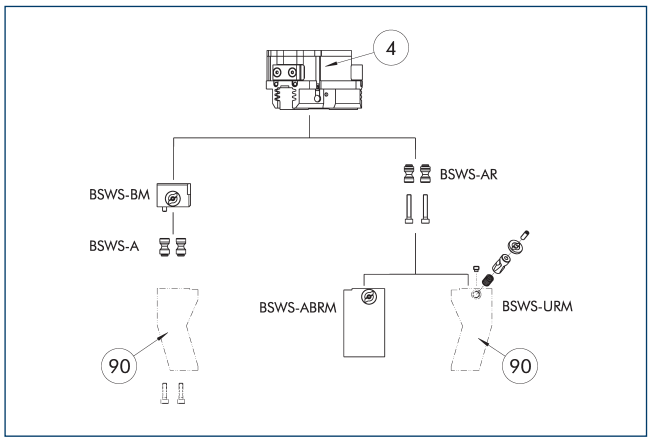
(4) Grippers
(90) Customized gripper fingers

There are various jaw quick-change systems available for the gripper. For detailed information, please refer to the corresponding product.

Description	ID	Scope of delivery
Jaw quick-change system adapter pin		
BSWS-A 64	0303022	2
BSWS-AR 64	0300092	2
Quick-change jaw system base		
BSWS-B 64	0303023	1
Jaw quick-change system finger blank		
BSWS-ABR-PGZN-plus 64	0300072	1
BSWS-SBR-PGZN-plus 64	0300082	1
Jaw quick-change system locking mechanism		
BSWS-UR 64	0302991	1

ⓘ Only systems that are listed in the table, can be used.

Jaw quick-change system BSWS-M



(4) Grippers

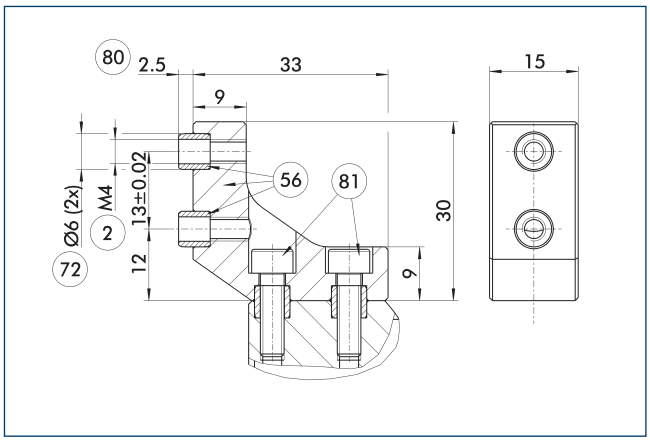
(90) Customized gripper fingers

There are various jaw quick-change systems available for the gripper. For detailed information, please refer to the corresponding product.

Description	ID	Scope of delivery
Jaw quick-change system adapter pin		
BSWS-A 64	0303022	2
BSWS-AR 64	0300092	2
Quick-change jaw system base		
BSWS-BM 64	1313900	1
Jaw quick-change system finger blank		
BSWS-ABRM-PGZN-plus 64	1420851	1
Jaw quick-change system locking mechanism		
BSWS-URM 64	1398401	1

ⓘ Only systems that are listed in the table, can be used.

ZBA-L-plus 64 intermediate jaws



(2) Finger connection

(56) Included in the scope of delivery

(72) Fit for centering sleeves

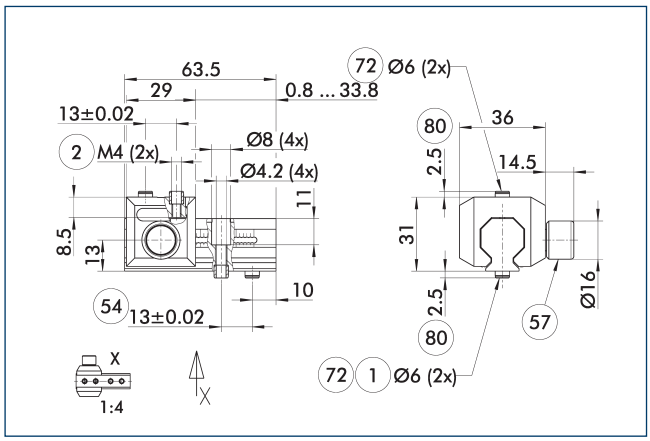
(80) Depth of the centering sleeve hole in the counter part

(81) Not included in the scope of delivery

The optional ZBA-L-plus intermediate jaws allow the screw connection diagram of the top jaws to be rotated by 90°. This makes it easier to design and produce top jaws (particularly for long versions) because no deep through-bores are required.

Description	ID	Material	Finger interface	Scope of delivery
Intermediate jaw				
ZBA-L-plus 64	0311722	Aluminum	PGN-plus 64	1

UZB 64 universal intermediate jaw

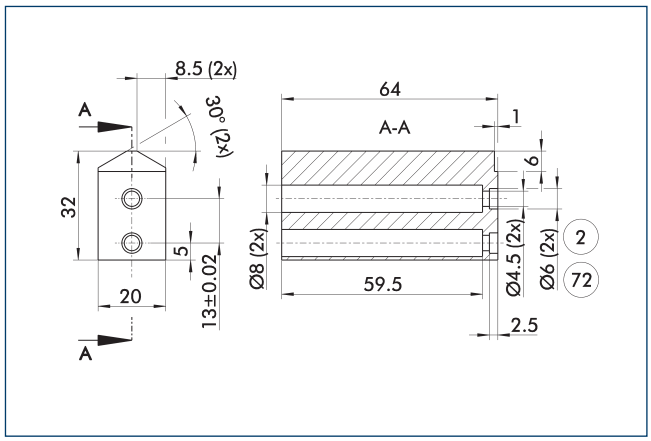


1 Gripper connection
2 Finger connection
54 Optional right or left connection
57 Locking
72 Fit for centering sleeves
80 Depth of the centering sleeve hole in the counter part

The drawing shows the UZB universal intermediate jaw.

Description	ID	Grid dimension
		[mm]
Universal intermediate jaw		
UZB 64	0300042	1.5
Finger blank		
ABR-PGZN-plus 64	0300010	
SBR-PGZN-plus 64	0300020	

Finger blanks ABR- / SBR-PGZN-plus 64

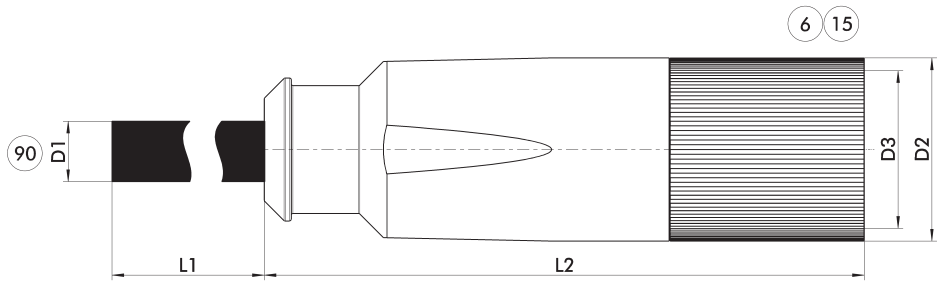


2 Finger connection
72 Fit for centering sleeves

The drawing shows the finger blank which can be reworked by the customer.

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 64	0300010	Aluminum	1
SBR-PGZN-plus 64	0300020	Steel	1

Power cable



Connection cables such as power cables and encoder cables are specifically designed for connecting SCHUNK products with drive control units. We will gladly help you to select the right connection cables.

(6) Connection module side
(15) Socket
(90) Prefabricated to connect to the higher-level components

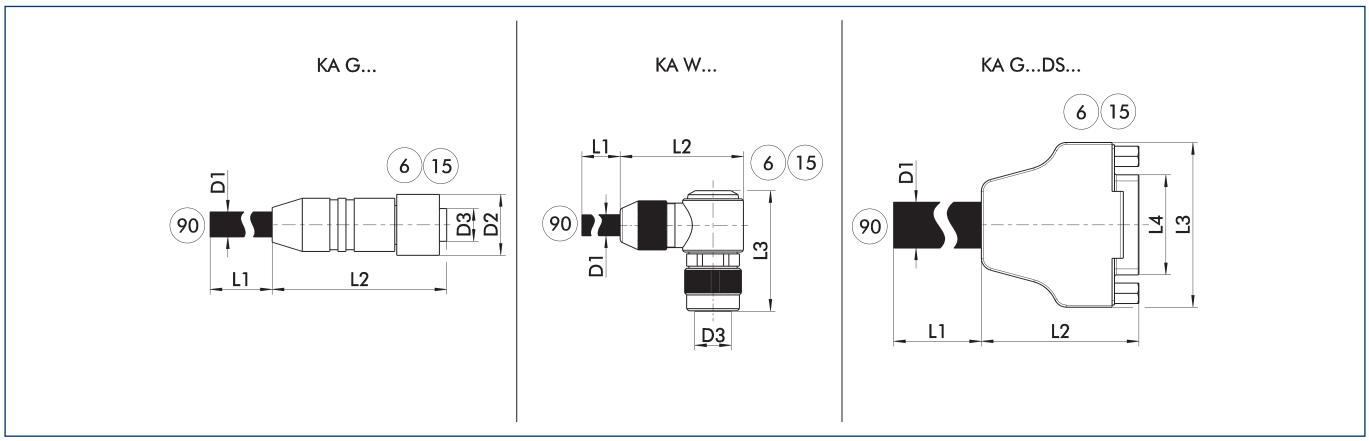
Description	ID	L1	D1	L2	D2	D3
		[m]	[mm]	[mm]	[mm]	
Power cable for SCHUNK ECM – cable track compatible						
KA GLN1707-LK-00500-7	0306480	5	8.4	54	21	M17
KA GLN1707-LK-01000-7	0306481	10	8.4	54	21	M17
KA GLN1707-LK-01500-7	0306482	15	8.4	54	21	M17
KA GLN1707-LK-02000-7	0306483	20	8.4	54	21	M17
Power cable für SCHUNK ECM – torsion compatible						
KAR GLN1707-LK-00500-7	0306485	5	8.2	54	21	M17
KAR GLN1707-LK-01000-7	0306486	10	8.2	54	21	M17
KAR GLN1707-LK-01500-7	0306487	15	8.2	54	21	M17
KAR GLN1707-LK-02000-7	0306488	20	8.2	54	21	M17

ⓘ Please observe the min. bending radius for cable track-compatible cables or the max. torsion angle for torsion-compatible cables. These are generally 10 times the cable diameter or +/- 180°/m.

EZN 64

Universal gripper

Encoder cable



KA G... encoder cable with straight plug
KA W... encoder cable with angeled plug
KA G...DS... Sub D encoder cable

(6) Connection module side
(15) Socket

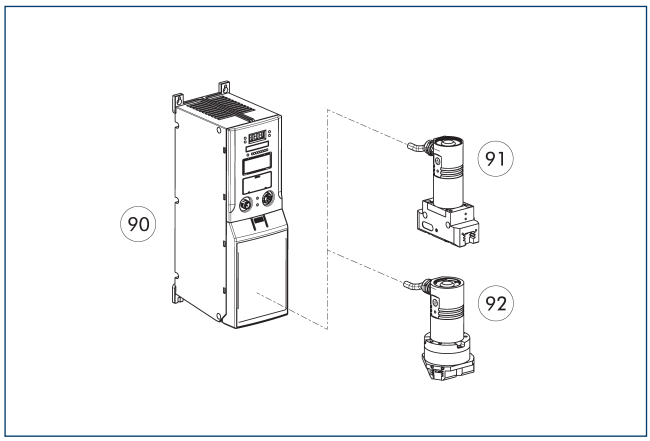
(90) Prefabricated for connection to the drive controller

Connection cables such as power cables and encoder cables are specifically designed for connecting SCHUNK products with drive control units. We will gladly help you to select the right connection cables.

Description	ID	L1	D1	L2	D2	D3
		[m]	[mm]	[mm]	[mm]	
Sensor cable for SCHUNK ECM – cable track compatible						
KA GLN1208-GK-00500-7	0306470	5	9.7	57	20	M12
KA GLN1208-GK-01000-7	0306471	10	9.7	57	20	M12
KA GLN1208-GK-01500-7	0306472	15	9.7	57	20	M12
KA GLN1208-GK-02000-7	0306473	20	9.7	57	20	M12
Sensor cable for SCHUNK ECM – torsion compatible						
KAR GLN1208-GK-00500-7	0306475	5	8.6	57	20	M12
KAR GLN1208-GK-01000-7	0306476	10	8.6	57	20	M12
KAR GLN1208-GK-01500-7	0306477	15	8.6	57	20	M12
KAR GLN1208-GK-02000-7	0306478	20	8.6	57	20	M12

ⓘ Please observe the min. bending radius for cable track-compatible cables or the max. torsion angle for torsion-compatible cables. These are generally 10 times the cable diameter or +/- 180°/m.

SCHUNK ECM Drive controller



(90) Controller
(91) EGN 2-finger parallel gripper
(92) EZN 3-finger centric gripper

The controller ECM can be used to operate the electric grippers EGN or EZN. It is available with the PROFINET, PROFIBUS and CAN communication types.

Description	Power supply (logic)	Power supply (load)
	[V]	[V]
Controller		
ECM-EZN	24	24
Termination resistor - CAN		
ST SG1204-CN-A-A		
Termination resistor - PROFIBUS		
ST SG1204-PB-A-A		
CAN communication cable - drag chain suitable		
KA GGN1204-CN-00150-A		
KA GGN1204-CN-00300-A		
KA GGN1204-CN-00500-A		
KA GGN1204-CN-01000-A		
PROFIBUS communication cable - drag chain suitable		
KA GGN1204-PB-00150-A		
KA GGN1204-PB-00300-A		
KA GGN1204-PB-00500-A		
KA GGN1204-PB-01000-A		

ⓘ We will be happy to help you select the right controller. Please contact us for assistance.

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